

PSYCHE

Vol. 72

September, 1965

No. 3

A REDEFINITION OF *ISCHYROPALPUS*, AND SIX NEW SPECIES (COLEOPTERA: ANTHICIDAE)¹

BY FLOYD G. WERNER

Department of Entomology, University of Arizona, Tucson

The principal features that have been used to distinguish *Lappus* Casey from *Ischyropalpus* LaFerté are the generally smaller size, less densely sculptured forebody and lack of sharp margins on head and pronotum of the former. It has been evident for some time that the division is somewhat arbitrary. Some species are readily assignable to each genus; others don't fit in either very well. One is faced with the choice of establishing a series of poorly defined genera to accommodate the known species or of placing all of them in one. I believe that the second alternative is the better one.

Genus *Ischyropalpus* LaFerté

Anthicus (*Ischyropalpus*) LaFerté 1848, 106, 141, 314 (Type-species:

Anthicus sericans Erichson 1834, designated by LaFerté on p. 106).

Pic 1911, 30. Blackwelder 1945, 433.

Ischyropalpus: Casey 1895, 656. Bonadona 1961, 150 (designates

Anthicus perplexus LaFerté 1848 as type-species; designation invalid because of the original designation of *sericans* by LaFerté 1848.)

Lappus Casey 1895, 656 (Type-species *Anthicus nitidulus* LeConte

1851 — NEW DESIGNATION — NEW SYNONYMY.

Anthicus (*Lappus*): Pic 1911, 30. Leng 1920, 163. Blackwelder 1945, 433.

As here redefined, *Ischyropalpus* is a very isolated genus in the family, with a number of features that are distinctive. The first of these is the form of the mesosternum, as shown in Fig. 1. This structure is slightly expanded, but not as greatly as in *Acanthinus*, *Baulius*, *Euvacusus*, *Formicilla* and *Vacusus* in the New World fauna and some other groups in the Old World. The form of the hind angles is unique. The sides extend obliquely laterally and posteriorly to the level of the edges of the ventral portion of the mesepisterna, meeting the hind margin abruptly and at an acute angle well lateral to the middle coxae. The mesepisterna and mesepi-

¹This study was supported by National Science Foundation Grant GB-427. Agricultural Experiment Sta., Dept. Entomology, Journ. Art. #1068.

mera are not visible behind the hind margins of the mesosternum. The sides of the mesosternum are flattened and meet the adjacent flattened portion of the mesepisterna at a slight angle, only a fine groove separating them. There is no fringe of setae along this groove.

Another feature that appears to be unique in the family is the presence of a zone of tiny spines on the bases of the tibial spurs, encircling the spurs. These are present in all of the species of *Ischyropalpus* examined in slide preparations. All other Anthicidae examined have the spurs without spines or have the spines arranged in two longitudinal rows on the surface nearest the tarsus.

Some other external features are apparently quite stable, although not limited to the genus. The tactile setae are short and inconspicuous and the elytral punctures are not arranged in rows. The genus *Anthicus*, s. str., is similar in both these features, although some species have both tactile and normal setae long.

The ♂ aedeagus is distinctive. The tegmen has the parameres separate and sometimes very complex; these are asymmetrical in some species. The apodeme (basal piece) is unusually broad, especially near the attachment of the parameres. The penis is relatively simple, but has an unusually long apodeme, which may extend beyond the end of the apodeme of the tegmen in repose. The penis probably slides freely in the tegmen, because it is sometimes found far extended in dissected specimens. The internal sac is extremely complex and completely unlike this structure in any other genus examined. The entire apical area has transverse ridges or thickenings and there is a pair of plates about half-way along the sac. These have not been seen in any other genus. The plates are absent in the known males of the Eryngii-Group described below, but present in all other members of the genus examined.

The Eryngii-Group also is different in the external feature most easily seen in the rest of the members of the genus. This is the shape of the last segment of the maxillary palpi, which is in the form of a roughly isosceles triangle with the apex at the point of attachment. Many species have this segment extremely broad. But a few, notably *I. sericeus* Bonadonna, have the sides of the triangle unequal and the apex rather narrow. The members of the Eryngii-Group have the segment narrowly securiform.

The typical species, not including the Eryngii-Group, have a rather distinctive facies. The prothorax is quite deeply constricted laterally in the basal third, with the sides rounded from there to the collar. The disc is not grooved at the level of the constriction. The large species that made up most of the genus *Ischyropalpus* as previously

defined have the head and pronotum deeply sculptured, with the disc somewhat flattened and the base of the head and sides of the pronotum anterior to the constriction ending in a sharp margin that is lenticular in profile.

Uniting *Lappus* with *Ischyropalpus* necessitates a rather large number of recombinations. To this number are added some new generic assignments and synonymy that have resulted from an examination of the types. Bonadonna has recently treated most of the species assignable to *Ischyropalpus* as previously defined (1961), and has made the changes necessary for these species. The new combinations, new synonymies, and the previous generic assignments of the species involved are given below, followed by a list of the species known to me, incorporating these changes.

The following are NEW COMBINATIONS: 1. Species described in *Anthicus*: *amplithorax* (Pic), *anticefasciatus* (Pic), *asphaltinus* (Champion) (= *Anthicus distinctus* Pic, *Lappus thicaniformis* Werner, both NEW SYNONYMY), *aterrimus* (Champion), *baeri* (Pic), *dilatipes* (Champion), *externenotatus* (Pic), *impressus* (LaFerté), *laticeps* (LaFerté), *nigrofemoratus* (Fairmaire and Germain), *parallelus* (Fairmaire and Germain), *subtilissimus* (Pic) (substitute name for *Lappus subtilis* Casey, a junior secondary homonym in *Anthicus*). 2. Species described in *Anthicus* but transferred to *Lappus* by Casey, 1895: *bactrianus* (Champion) (listed by Casey as *backianus*, a typographical error), *nitidulus* (LeConte) (= *Lappus alacer* Casey, *asperulus* Casey, *canonicus* Casey, *cursor* Casey, *nubilatus* Casey, *vigilans* Casey, all NEW SYNONYMY), *obscurus* (LaFerté), *occidentalis* (Champion), *punctipennis* (Champion), *sturmi* (LaFerté) (substitute name for *elegans* LaFerté, a junior primary homonym in *Anthicus*), *tumidicollis* (Champion). 3. Species described in *Anthicus* but transferred to *Anthicus* (*Lappus*) by Krekich, 1914: *nitidus* (Boheman) (= *Anthicus atomarius* Boheman). 4. Species described in *Anthicus* (*Ischyropalpus*): *batesi* (Pic), *hemicyclius* (Heberdey). 5. Species described in *Anthicus* (*Lappus*): *dormei* (Pic), *goyasensis* (Pic), *postobscurus* (Pic), *proprius* (Pic), *sipolisi* (Pic), *vagemaculatus* (Heberdey). 6. Species described in *Lappus*: *lividus* (Casey) (= *Lappus bipartitus* Casey, *ornatellus* Casey, *solivagans* Casey, *vividus* Casey, all NEW SYNONYMY), *pinalicus* (Casey), *turgidicollis* (Casey) (= *Lappus animatus* Casey, NEW SYNONYMY).

Anthicus trigonocephalus LaFerté 1848, described in the subgenus *Ischyropalpus*, is not included here. This species was described from India on the basis of a specimen lacking maxillary palpi. LaFerté placed it in a group separate from the South American species on the

basis of head shape. I have not seen a specimen of this species but have never seen a member of the genus from the Old World. Pic (1911) and Bonadonna (1961) did not include it as a member of *Ischyropalpus* and there is no reason to believe that it should be retained in this genus.

Anthicus gibbithorax Pic, transferred to *Lappus* by Casey (1895) from the description, does not belong to this genus. It was described as from Texas but I have had an opportunity to examine the type. It is undoubtedly an erroneously labelled Old World species, and is not assignable to *Ischyropalpus*.

LIST OF SPECIES — GROUP NAMES

[Names believed valid are in bold-face type]

adstrictus Krekich 1914 — Peru.

alacer (Casey) — see *nitidulus*.

albifasciatus (Pic) 1897 — probably South America.

var. **argentinus** (Pic) 1904 — Argentina.

alvarengai, new species — Brazil.

amplicolis (Boheman) — see *sericans*.

amplithorax (Pic) 1895 — Brazil.

animatus (Casey) — see *turgidicollis*.

anticefasciatus (Pic) 1910 — Argentina.

argentinus (Pic) — see *albifasciatus*.

asperulus (Casey) — see *nitidulus*.

asphaltinus (Champion) 1890 — Mexico, Guatemala.

distinctus (Pic) 1897 — Mexico.

thicaniformis (Werner) 1956 — Mexico.

aterrimus (Champion) 1890 — Guatemala.

atomarius (Boheman) — see *nitidus*.

attenuatus Krekich 1913 — Argentina.

backianus (Casey) — see *bactrianus*.

bactrianus (Champion) 1890 — Mexico, Guatemala.

backianus (Casey) 1895 — typographical error.

baeri (Pic) 1902 — Peru.

batesi (Pic) 1914 — Colombia.

bipartitus (Casey) — see *lividus*.

boliviensis (Pic) 1909 — Bolivia.

bruchi (Pic) — see *caesiosignatus*.

caesiosignatus (Boheman) 1858 — probably Ecuador.

bruchi (Pic) 1904 — Argentina.

var. **mendozanus** (Pic) 1914 — Argentina.

- canonicus* (Casey) — see *nitidulus*.
catamarcanus (Pic) — see *testaceoguttatus*.
cursor (Casey) — see *nitidulus*.
curtisi (Solier) 1851 — Chile.
 ssp. *wittmeri* Bonadona 1961 — Chile.
decoratus, new species — Brazil.
dentipes Bonadona 1961 — Argentina.
dilatipes (Champion) 1890 — Mexico.
distinctus (Pic) — see *asphaltinus*.
dormei (Pic) 1933 — Brazil.
elegans (LaFerté) — see *sturmi*.
eryngii, new species — Uruguay.
esteroensis (Pic) — see *testaceoguttatus*.
externenotatus (Pic) 1913 — Argentina.
freyi, new species — Venezuela.
goyasensis (Pic) 1904 — Brazil.
hemicyclius (Heberdey) 1937 — Costa Rica.
impressus (LaFerté) 1848 — Colombia.
interamnis (LaFerté) 1848 — Brazil.
jatahyensis (Pic) 1899 — Brazil.
jenseni Krekich 1913 — Argentina.
latereductus (Pic) 1913 — Chile.
laticeps (LaFerté) 1848 — Venezuela.
lividus (Casey) 1895 — U. S. A.
 bipartitus (Casey) 1895 — U. S. A.
 ornatellus (Casey) 1895 — U. S. A.
 solivagans (Casey) 1895 — U. S. A.
 vividus (Casey) 1895 — U. S. A.
maculosus (Fairmaire and Germain) 1860 — Chile.
mapirianus (Pic) 1909 — Bolivia.
 var. *semirufescens* (Pic) 1909 — Bolivia.
 var. *testaceitarsis* (Pic) 1913 — Mexico.
mendozanus (Pic) — see *caesiosignatus*.
nigrofemoratus (Fairmaire and Germain) 1860 — Chile.
nitidulus (LeConte) 1851 — U. S. A.
 alacer (Casey) 1895 — U. S. A.
 asperulus (Casey) 1895 — U. S. A.
 canonicus (Casey) 1895 — U. S. A.
 cursor (Casey) 1895 — U. S. A.
 nubilatus (Casey) 1895 — U. S. A.
 vigilans (Casey) 1895 — U. S. A.
nitidus (Boheman) 1858 — probably Ecuador.

- atomarius* (Boheman) 1858 — probably Ecuador.
nubilatus (Casey) — see *nitidulus*.
obscurus (LaFerté) 1848 — U. S. A.
occidentalis (Champion) 1890 — Mexico.
ornatellus (Casey) — see *lividus*.
parallelus (Solier) 1851 — Chile.
patagonicus (Pic) 1902 — Argentina.
perplexus (LaFerté) 1848 — Colombia.
pinalicus (Casey) 1895 — U. S. A.
planicollis (Fairmaire and Germain) — see *sericans*.
postobscurus (Pic) 1904 — Brazil.
proprius (Pic) 1904 — Peru.
punctipennis (Champion) 1890 — Mexico to Venezuela.
puteifer, new species — Argentina.
quadriplagiatus (LaFerté) 1848 — Colombia.
semirufescens (Pic) — see *mapirianus*.
sericans (Erichson) 1834 — South America.
 ampliocollis (Boheman) 1858 — probably Ecuador.
 planicollis (Fairmaire and Germain) 1860 — Chile.
 var. **trieductus** (Pic) 1928 — Argentina.
sericeus Bonadonna 1961 — Argentina.
sipolisi (Pic) 1933 — Brazil.
solivagans (Casey) — see *lividus*.
sturmi (LaFerté) 1848 — U. S. A. (substitute name).
 elegans (LaFerté) 1848 — U. S. A.
subtilis (Casey) — see *subtilissimus*.
subtilissimus (Pic) 1896 — U. S. A. (substitute name).
 subtilis (Casey) 1895 — U. S. A.
tenax (Pic) 1904 — Brazil.
 var. **tenuiculus** (Pic) 1904 — Brazil.
tenuiculus (Pic) — see *tenax*.
testaceitarsis (Pic) — see *mapirianus*.
testaceoguttatus (Fairmaire and Germain) 1863 — Chile.
 catamarcanus (Pic) 1926 — Argentina.
 var. **esteroensis** (Pic) 1928 — Argentina.
thicaniformis (Werner) — see *asphaltinus*.
tibialis, new species — Venezuela.
titschacki (Pic) 1944 — Peru.
trieductus (Pic) — see *sericans*.
tumidicollis (Champion) 1890 — Panama.
turgidicollis (Casey) 1895 — U. S. A.
 animatus (Casey) 1895 — U. S. A.

vagemaculatus (Heberdey) 1938 — Brazil.

venezuelensis (Pic) 1900 — Venezuela.

vigilans (Casey) see *nitidulus*.

vividus (Casey) — see *lividus*.

wittmeri Bonadona — see *curtisi*.

DESCRIPTION OF NEW SPECIES

Ischyropalpus tibialis, new species

(Fig. 2)

2.48–3.02 mm, dark piceous, elytra slightly paler, legs and antennae brown. Head and pronotum sparsely and finely punctured, not sharply margined. Pubescence in weak postbasal transverse impression of elytra not oblique or transverse. Hind tibiae of ♂ with a tuft of long setae medially near apex.

Holotype ♂: Length 2.82 mm. Head 0.49 mm long to the distinct frontoclypeal suture, 0.58 wide across eyes, 0.49 just behind, the base short and evenly rounded behind eyes, a line connecting the hind margins of the eyes 0.17 mm from middle. Surface smooth and shiny, the punctures small and 0.03 to 0.04 mm from center to center, the intervals not curving down to them. Disc evenly curved, not very convex, the clypeus on almost the same curve. Pubescence sparse and inconspicuous, decumbent, almost appressed, 0.06 mm long, slightly curved; tactile setae erect, straight, fine, 0.08 mm. Last segment of maxillary palpi 0.20 mm long on outer side, 0.15 on inner, 0.17 across apex, the apical angles well-defined. Eyes large and moderately prominent, 0.26 × 0.19 mm, separated by 0.41, finely faceted, with curved setae ca. 0.01 mm long at intervals in posterior half. Antennae with segment 1 slightly swollen in middle and feebly pedunculate, segments 2–10 widest near apex and becoming more triangular, 11 truncate at base, widest near middle, the sides then curving to a blunt point. Measurements in 0.01 mm: 17/8, 10/5, 13/5, 12/5, 12/6, 12/6, 12/6, 12/7, 12/8, 10/8, 18/8.

Pronotum 0.64 mm long, 0.38 wide at base, 0.31 at the well-defined constriction 0.23 mm from base, 0.54 maximum at 0.44 mm from base, 0.23 at the short but well-defined collar. Basal impressed line distinct. Sides almost evenly rounded from constriction to collar and disc evenly convex from basal impressed line to collar. Surface as on head, the punctures slightly deeper and sparser. Elytra 1.69 mm long, 0.74 wide at the well-marked humeri, 0.90 maximum just before middle, subparallel. Omoplates feebly elevated; postbasal transverse impression feeble, with punctures no denser or deeper than

on rest of surface, with setae that are directed backward. Suture elevated in apical half. Surface shiny and smooth, with some very sparse and fine punctulation and small punctures ca. 0.05 mm from center to center, the intervals not curved down to punctures. Pubescence decumbent, almost appressed, sparse, 0.10 mm long, inconspicuous; tactile setae suberect to erect, 0.08 mm.

Sternum 7 flattened, with an inconspicuous median rounded zone of more erect, curved setae, all of which are directed backward. Sternum 8 flattened, its apical margin very shallowly concave. Tergum 8 with sides gradually convergent to apex, which is more abruptly convergent with a short median point; 0.33 mm wide at base of exposed portion. Femora gradually thickened to about apical fourth. Front femur 0.54×0.18 mm, front tibia 0.42×0.07 , hind femur 0.64×0.20 . All trochanters with a small tuft of setae at outer apical portion. Front and middle tarsi slightly expanded, with a denser pad than in ♀. Hind tibiae flattened and slightly bowed on surface facing tibia, with a conspicuous tuft of setae in apical fourth of median side, the individual setae suberect for 0.08 mm, then quite sharply curved toward apex, then almost straight for ca. 0.05 mm.

The combination of sparsely and finely punctured head, pronotum and postbasal transverse impression of elytra, lack of oblique setae in the impression, and presence of a tuft of long setae near the apex of the hind tibiae in the ♂, appears to be unique in the genus. Some of the males have the tuft of setae on the hind tibiae shorter and barely curved. Females have the legs unmodified.

Distribution: Known from northern Venezuela and the island of Trinidad. Holotype ♂: Maracay, Est. Aragua, VENEZUELA, 29 May 1942, en *Astromelia* (U. Venezuela — Maracay). Paratypes: 44 ♂, 46 ♀, same data (U. Ven. — Maracay and Werner). 4 ♂, 9 ♀, Maracay, 27 Jan. 1943, R. Araque, en flores *Persea gratissima* (U. Ven. — Maracay and Werner). 2 ♂, 3 ♀, El Valle, [Est. Aragua], Venezuela, 24 Sept. 1938, on *Mimosa arenosa* Poir.; 3 ♀, 29 Mar. 1938, on *Cordia cylindrostachya*; 2 ♀, 14 Aug. 1939, on *Amaranthus dubius*; all C. H. Ballou (U. S. N. M.). 1 ♂, La Victoria, Est. Aragua, 26 Aug. 1960, C. Bordón (Bordón). 1 ♂, San Antonio de los Altos, Est. Miranda, Venezuela, 30 Aug. 1959; 1 ♂, 1300 m, 6 Sept. 1959; both C. Bordón (Bordón). 1 ♀, Los Angelinos (Los Teques), Venezuela, 27 Mar. 1959, C. Bordón (Bordón). 3 ♂, 5 ♀, Umg. Caracas, Venezuela, Jan. 1954, G. u. H. Frey (Mus. G. Frey, Tutzing, Germany). 3 ♀, Sta. Lucia, Venezuela, May 1922, L. R. Reynolds (F. Psota Coll., C. N. H. M.).

1 ♀, San Esteban, nr. Puerto Cabello, Venezuela, 1-6 Dec. 1939, P. J. Anduze (C. N. H. M.). 1 ♂, Simla, N. TRINIDAD, W. I., 1-9 May 1963; 2♀, 24-30 Apr. 1963; all M. Emsley, light trap (Werner).

The Eryngii — Group

A small number of South American species forms a group that is quite aberrant in the genus. The form of the last segment of the maxillary palpi and of the prothorax are entirely different from those of the typical members. The last segment of the maxillary palpi is narrowly securiform rather than triangular. The prothorax is not at all constricted laterally before the basal impressed line, being more like that of *Anthicus*, *s. str.*, but unusually enlarged in the ♂ of at least one species.

The members of the group are assigned to *Ischyropalpus* on the basis of the form of the mesosternum, the presence of a zone of small spines around the basal portion of the tibial spurs (seen only in *puteifer*), and on the form of the tegmen and general features of the internal sac of the ♂ aedeagus in *eryngii* and *puteifer*, the only species known from males. The paired plates of the middle of the sac are absent. And the apodeme of the penis is extremely long.

The group is therefore very distinct within the genus. Whether it is specialized or primitive is difficult to say. But it appears to be much more closely related to normal species of *Ischyropalpus* than to any other group, and is most conveniently treated as part of this genus.

Key to Species of Eryngii — Group

1. Pubescence in basal half of elytra cinereous, darker, almost brown, in apical half (as seen in side view with light from front). Dark brown to black with bases of femora and antennae slightly paler, occasionally paler with the region of the post-basal transverse impression of the elytra rufescent. Setae distinctly oblique between and behind the omoplates of the elytra. Uruguay *eryngii*
 Elytral pubescence of uniform color, not distinctly oblique in omoplate region 2.
2. Elytra dull luteous, brown across base, in a postmedian crescent and in a narrow strip connecting base and crescent, near and parallel to suture. Elytral pubescence fine and moderately dense. Punctures of pronotum slightly confluent longitudinally. Est. Minas Gerais, Brazil *decoratus*
 Elytra pale to dark but without dark markings 3.

3. Piceous, the tibiae, tarsi, antennae except apex, labrum and mouth parts pale. Tempora of head extremely reduced, the base almost evenly and gently rounded behind the large eyes. Venezuela *freyi*
Elytra brown to luteous. Tempora distinct 4.
4. Head black, prothorax and most of underside brown; elytra, labrum, mouth parts, antennae and legs rufescent. Punctures of forebody sparser but those on head separated by less than half their diameters. 3.26 mm. Pará, Brazil *alvarengai*
Brown to rufescent, the head not darker. Punctures of forebody denser, those on head very narrowly separated but not confluent. Prothorax unusually large, especially in ♂, which has a pit on the surface of the front and hind femora facing the tibia. 3.53 - 4.24 mm. N. Argentina and Mato Grosso, Brazil *puteifer*

Ischyropalpus eryngii, new species

(Fig. 3)

2.76 - 3.28 mm, piceous above, the elytra slightly brownish, the appendages obscurely paler. Elytral pubescence moderately sparse, appressed, that from base to posterior border of weak postbasal transverse impression cinereous, the rest brown. The pale pubescence is much more noticeable, but is no denser than the rest. Sides and base of pronotum also with some cinereous pubescence, that on disc brown. Two large females from Arro. Espinillo are paler, with the elytra pale laterally in the postbasal transverse impression. These have the sculpture and pubescence similar to the more typical specimens, but one of them has the elytral pubescence uniform.

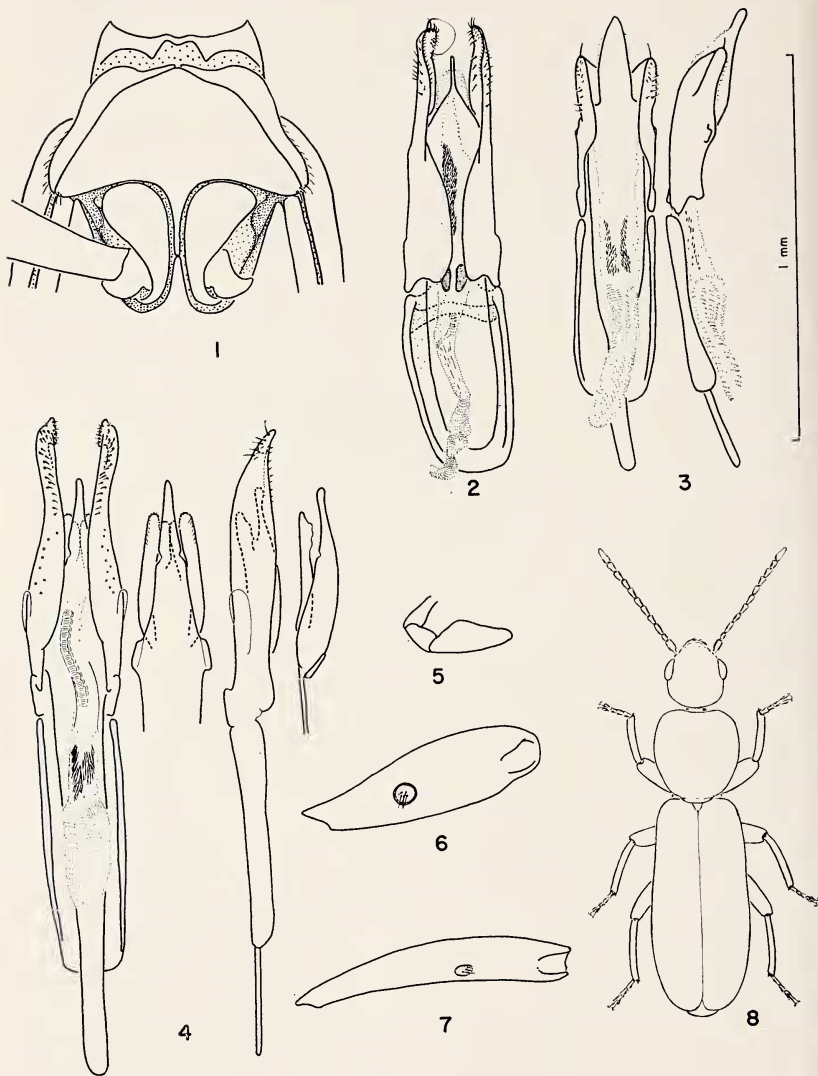
Holotype ♂: Length 2.91 mm. Head subtruncate at base, 0.47 mm long, 0.59 wide across eyes, 0.45 behind, the tempora short, the temporal angles distinct, and the base gently and evenly curved between them. A line connecting the backs of the eyes is 0.15 mm from the middle of the base. Disc slightly flattened, densely covered with sharply defined flat-bottomed punctures, even on frons, the punctures ca. 0.03 mm from center to center, the intervals narrow, less than half the diameter of the punctures, shiny; the punctures not at all confluent. Setae appressed, ca. 0.04 mm long, brown on disc, pale across base; tactile setae erect, straight, ca. 0.04 mm. Frontoclypeal suture barely indicated, the frons on same curve as front and with the same sculpture. Last segment of maxillary palpi narrowly securiform, 0.18 × 0.09 mm. Eyes large, 0.27 × 0.23 mm, prominent, moderately coarsely faceted, with slightly curved

setae ca. 0.01 mm long at intervals; separated by 0.38 mm on front and covering most of sides. Antennae brown, with segment 11 obscurely paler, segments 2-10 widest near apex. Measurements in 0.01 mm: 14/7, 9/6, 12/6, 11/7, 12/7, 12/8, 10/8, 10/8, 10/8, 10/10, 17/10. Segment 1 somewhat barrel-shaped, pedunculate, 2-10 widest near apex, becoming more triangular, 9-10 subtruncate at base, 11 truncate at base, tapering to a blunt point from basal 2/5. Setae and tactile setae rather shaggy.

Pronotum 0.64 mm long, 0.41 wide at base, 0.54 maximum, 0.26 at the well-defined collar. Basal impressed line distinct. Sides widest at apical 2/5, curving evenly to collar and almost straight to basal impressed line. Disc slightly flattened; sculpture similar to head but punctures slightly deeper, smaller and denser. Tactile setae longer, ca. 0.05 mm. Elytra subparallel, 1.79 mm long, 0.73 wide at the well-marked humeri, 0.90 maximum, slightly flattened but with suture elevated behind the weak postbasal transverse impression; omoplates feebly elevated. Setae decumbent, straight, 0.05 mm long; tactile setae suberect, slightly curved, 0.04 mm. The setae between and just behind the omoplates are slightly oblique. Surface shiny, with very fine punctulation and slight irregularities; punctures small but sharply defined, ca. 0.03 mm from center to center, the intervals flat.

Sides of mesosternum and ventral portion of mesepisterna smooth and shiny, with a few fine punctures and closely appressed setae. Mesepimera apparently not visible along sides of mesepisterna. Metepisterna and metasternum with fine punctures and feebly microreticulate. Abdomen shiny, with fine punctures. Sternum 7 simple; sternum 8 transversely excavated in apical third, with the apical margin very shallowly concave. The dical excavation does not appear to have any modification of the setae. Tergum 7 with a concave hind margin. Tergum 8 flat, shiny, finely punctured, 0.26 mm wide, the apical portion broadly and evenly rounded. Femora moderately heavy beyond middle. Front femur 0.49×0.17 mm, front tibia 0.45×0.06 , hind femur 0.61×0.18 . Coxae all dark, trochanters and rest of leg dark rufescent, the trochanters slightly paler. Front tarsi somewhat expanded. Females are almost the same as the males, but have the front tarsi narrower.

Distribution: Known only from Uruguay. Holotype ♂: Maldonado (Cerro Pelado), [URUGUAY], 25.XII.12, sobre *Eryngium* sp., Coll. Tremoleras. Paratypes: 8 ♂, 4 ♀, same data. 1 ♂, Maldonado (Pan de Azúcar), 15.XII.12, sobre *Eryngium* sp., Coll. Tremoleras. 7 ♂, 5 ♀, Minas — Arro. Espinillo, [URUGUAY], 10.XII.12, sobre *Eryngium* sp., Coll. Tremoleras. Holotype and paratypes in Museo de La Plata.



***Ischyropalpus freyi*, new species**

Very similar to *eryngii*, differing in the eyes being even larger, the base of the head short and gently, evenly curved behind them, the punctures, of the head especially, smaller and the intervals wider. Elytral pubescence quite sparse, of uniform tan color.

Holotype ♀: Length 2.79 mm. Head 0.46 mm long to the extremely feebly indicated frontoclypeal suture, 0.54 to apex of clypeus, 0.56 wide across eyes, 0.46 just behind. Base very short, almost evenly and gradually curved, the tempora very short and nearly obsolete; a line between the hind margins of the eyes is 0.13 mm from middle of base. Disc slightly flattened. Surface smooth and shiny, with quite small flat-bottomed punctures ca. 0.03 mm from center to center, the intervals flat, and as wide as punctures in most cases. Setae appressed, 0.04 mm long, tactile setae erect, straight, 0.04 mm. Clypeus on same curve as front and similarly sculptured. Last segment of maxillary palpi narrowly securiform 0.15 × 0.08 mm. Eyes very large, prominent, moderately coarsely faceted, separated by 0.36 mm and covering most of sides of head, with curved setae ca. 0.01 mm long at the intervals of the facets. Antennae similar to *eryngii*, bright rufescent at base, gradually darker beyond segment 6. Measurements in 0.01 mm: 14/8, 8/5, 9/5, 8/6, 9/6, 9/6, 9/6, 8/8, 9/9, 8/9, 15/8. Pronotum similar to *eryngii*, 0.64 mm long, 0.38 wide at base, 0.52 maximum and 0.22 at collar. Punctures denser than on head but of similar diameter, separated by less than their diameters in most cases, slightly oval longitudinally but not at all confluent. Elytra also very similar to *eryngii* except for the unicolorous pubescence, which is nearly longitudinal in the region of the omoplates; length 1.69 mm, width at humeri 0.68, 0.83 maximum. Punctures ca. 0.04 mm from center to center; setae

EXPLANATION OF PLATE 14

Fig. 1. Ventral view of mesothorax and part of metathorax of *Ischyropalpus caesiosignatus* (Boheman).

Fig. 2. Ventral view of aedeagus of *Ischyropalpus tibialis*, new species, paratype, Maracay, Venezuela.

Fig. 3. Ventral and left lateral views of aedeagus of *Ischyropalpus eryngii*, new species, paratype, Maldonado, Uruguay.

Fig. 4. Ventral and left lateral views of aedeagus and of penis or median lobe of *Ischyropalpus puteifer*, new species, Mojón de Fierro, Argentina.

Figs. 5-7. Details of *Ischyropalpus puteifer*, new species, holotype ♂. Fig. 5. Left maxillary palpus. Fig. 6. Left front femur in ventral view. Fig. 7. Left hind femur in ventral view.

Fig. 8. *Ischyropalpus puteifer* new species, holotype ♂ (× 11). All other figures at scale indicated.

0.05 mm long, tactile setae 0.04. Wings apparently functional. Mesosternum, mesepisterna and legs similar to *eryngii*. Front femur 0.44×0.15 mm, front tibia 0.41×0.07 , hind femur ca. 0.51×0.16 .

Holotype ♀: Rancho Grande, [nr.] Maracay, [Est. Aragua], VENEZUELA, XI. 1960, G. Frey, in Museum G. Frey, Tutzing, Germany.

***Ischyropalpus decoratus*, new species**

This species, known only from the female holotype, is the only one in the group with a marked color pattern on the elytra. These are dull luteous with the basal area and a crescentric marking behind the middle on each elytron brown, the two connected by a narrow strip that parallels the suture. The suture is pale in a strip 0.17 mm wide, becoming darker at the base but feebly indicated even there. The pronotal punctures are more or less confluent longitudinally and the elytral pubescence is moderately dense, fine and appressed.

Holotype ♀: Length 2.88 mm. Brown, the head slightly darker, the elytra as described above, the antennae, palpi and legs dull luteous also. Head subquadrate, with distinct but short tempora, the base gently curved between the distinct temporal angles. Length 0.49 mm, width across eyes 0.59, behind 0.49. Eyes large, moderately prominent, 0.28×0.20 mm, separated by 0.40 on front, extending far down on sides of head. A line connecting their hind margins is 0.15 mm from middle of base. Facets moderately coarse, with curved setae at their intervals ca. 0.02 mm long. Surface of head densely covered with sharply defined flat-bottomed punctures ca. 0.03 mm from center to center, separated by less than half their diameters, slightly sparser on anterior part of frons; intervals smooth and shiny. Setae appressed, fine, ca. 0.03 mm long, tactile setae straight, erect, ca 0.01 mm. Frontoclypeal suture feeble, the clypeus on same curve as front. Last segment of maxillary palpi narrowly securiform, 0.14×0.08 mm. Antennae moderately stout, with segments 2-10 thickest near apex, becoming subtriangular. Measurements in 0.01 mm: 15/6, 8/6, 8/5, 8/6, 8/6, 8/7, 8/8, 8/8, 8/8, 8/8, 13/8. Segment 1 subparallel, feebly pedunculate, 2-3 thickest near apex, 4-10 subtriangular, becoming heavier, 9-10 subtruncate at base, 11 truncate at base, the sides gently curved to the blunt apex from near base. Setae and tactile setae rather shaggy.

Pronotum 0.67 mm long, 0.38 wide at base, 0.56 maximum and 0.26 at the short but well-defined collar. Sides widest at apical $2/5$, almost evenly curved to collar and almost straight back to the level of the distinct basal impressed line. Disc almost evenly convex, slightly concave behind middle. Punctures denser and smaller than on head,

slightly oval and feebly confluent longitudinally. Pubescence similar to head but tactile setae longer, ca. 0.04 mm. Scutellum pale. Elytra subparallel, 1.73 mm long, 0.69 wide at the well-defined humeri, 0.90 maximum. Surface shiny but very feebly punctulate, the small punctures 0.03 mm from center to center, slightly papillate, especially toward base. Omoplates feebly elevated; suture feebly elevated behind middle. Setae moderately dense, fine, appressed, 0.05 mm long; tactile setae suberect, almost straight, 0.04 mm. The general color of the elytra is dull luteous but the base from humeri to and including omoplates is brown, the suture here narrowly slightly paler. An obscure brown strip extends from near the suture in this brown zone to a crescentric marking on each elytron 0.90 mm from base and ca. 0.26 mm wide. The suture is pale for ca. 0.17 mm between the posterior markings and the strips, the boundaries of this pale zone almost straight. It continues obscurely into the basal area.

Mesosternum and ventral portion of mesepisterna smooth and shiny, the former quite narrow laterally. Mesepimera very narrowly exposed along edges of mesepisterna. Abdomen finely punctured and sparsely pubescent, the first visible sternum shiny, the rest feebly microreticulate. Legs, including front and middle coxae, dull luteous. Front femur 0.46×0.15 mm, front tibia 0.41×0.05 , hind femur 0.56×0.17 .

Holotype ♀: Paracatu, Minas Gerais, [BRAZIL], VII-1960 - 86/60, Exp. Formosa Col., in Museu Nacional, Rio de Janeiro, Brazil.

***Ischyropalpus alvarengai*, new species**

This species most closely resembles *decoratus* in general appearance, but it lacks elytral markings. The punctures on the pronotum are not confluent and the pubescence on the elytra is longer and coarser. If the single known specimen is typically colored, the coloration is distinctive, as indicated in the key to the species of the group.

Holotype ♀: Length 3.26 mm. Head subquadrate, 0.52 mm long, 0.64 wide across eyes, 0.54 behind, with the tempora short but distinct, the temporal angles well-marked and the base very gently and evenly curved between them. The middle of the base is 0.17 mm from a line connecting the hind margins of the eyes. Disc slightly flattened, evenly covered with flat-bottomed punctures ca. 0.03 mm from center to center, the intervals smooth and shiny, and less than half the diameter of the punctures. The sculpture continues to the frontoclypeal suture, which is fine but well marked, and onto the clypeus, which is on the same curve as the frons. Setae appressed, ca. 0.05 mm long, tactile setae erect, 0.04 mm. All of maxillae and labium rufescent, contrast-

ing with the dark head. Last segment of maxillary palpi narrowly securiform, 0.15×0.08 mm. Eyes moderately large and prominent, 0.31×0.20 mm, moderately coarsely faceted, occupying much of side of head, with curved setae ca. 0.02 mm long at the intervals of the facets. Antennae of same general proportions as *eryngii* but the intermediate segments stouter, 5-10 being subtriangular and gradually stouter, and subtruncate at base. Measurements in 0.01 mm: 18/8, 8/6, 9/6, 9/6, 9/8, 9/8, 9/8, 9/8, 9/9, 9/9, 9/8, 14/8.

Pronotum of form of *decoratus*, 0.76 mm long, 0.46 wide at base, 0.68 maximum and 0.28 at collar. Punctures denser than on head, longitudinally oval, narrowly separated. A few of them are slightly confluent longitudinally, but almost all are distinctly separated. The disc is slightly flattened, but almost evenly convex. Elytra suparallel, 1.98 mm long, 0.79 wide at the well-marked humeri, 1.02 maximum, somewhat flattened, with the omoplates and postbasal transverse impression barely indicated and the suture not elevated. Surface as in *decoratus*, the punctures fine and 0.04 mm from center to center; setae appressed but not closely so, slightly curved, 0.05 mm long, noticeably coarser and shaggier than in *decoratus*; tactile setae suberect to erect, 0.04 mm. There is a narrow slightly darkened strip along the suture, ca. 0.18 mm wide and most evident on the middle third. The region of the omoplates is also slightly darkened, but probably because the slightly translucent elytra reveal the top of the thorax. Wings apparently of full length. Underside as in *decoratus*, but mesepimera more distinctly visible. Legs rufescent, the coxae darkened toward base, the hind coxae mostly dark. Front femur 0.49×0.18 mm, front tibia 0.44×0.08 , hind femur 0.64×0.20 .

Holotype ♀: Cachimbo, Pará, BRASIL, VI-1962, M. Alvarega, in the collection of Col. Moacir Alvarenga, Rio de Janeiro, Brazil.

***Ischyropalpus puteifer*, new species**

(Figs. 4-8)

3.53-4.24 mm, brown with the appendages rufescent, to all rufescent; subopaque, moderately slender and flattened. Prothorax, especially of male, unusually large. Front and hind femora of male with a pit on the surface facing the tibia.

Holotype ♂: Length 4.24 mm. Head 0.67 mm long, 0.72 wide across eyes, 0.67 just behind, with short tempora, the base gently and evenly rounded between the poorly defined temporal angles, moderately retrosalient. Disc somewhat flattened, evenly covered with sharply defined flat-bottomed punctures 0.03 mm from center to center even on frons, the punctures only narrowly separated but not all con-

fluent, the intervals ca. $1/2$ the width of the punctures and shiny. The surface appears subopaque because of the dense punctures. Setae moderately dense, decumbent, 0.04 mm long, tactile setae suberect, 0.04 mm. Frontoclypeal suture distinct but not deep; surface of clypeus similar to frons. Labrum ogival, shiny. Last segment of maxillary palpi narrowly securiform (Fig. 5), 0.20×0.09 mm. Eyes moderately prominent, moderately coarsely faceted, 0.33×0.23 mm, separated by 0.51, a line connecting their hind margins 0.26 mm from middle of base. Antennae moderately slender, gradually thicker apically, the segments distinctly separated. Measurements in 0.01 mm: 19/9, 9/6, 13/8, 12/8, 13/8, 10/9, 12/9, 12/9, 12/9, 12/9, 18/9. Segment I parallel-sided, feebly pedunculate, 2-10 thickest near apex, gradually more truncate at apex, 6-10 distinctly truncate at base, subtriangular; 11 truncate at base, tapering to a blunt point from basal third.

Pronotum unusually large and broad, 1.13 mm long, 0.59 wide at base, 0.84 at beginning of expanded portion 0.26 mm from base, 1.00 maximum, 0.36 at the short collar. The apical area behind the collar is elevated above the collar, with the border of this elevated area slightly concave. This anterior border meets the sides in an even but rather sharp curve; the sides are then subparallel about half-way to the base, then slightly convergent to another sharp curve, which ends at the level of the distinct basal impressed line. Disc moderately flattened. Surface similar to head but punctures smaller and ca. 0.02 mm from center to center anteriorly and laterally, almost as on head in posterior half of disc. Lateral margins evenly rounded, but in a curve that is about as sharp as the one that joins the front and side margins. Elytra almost parallel, 2.44 mm long, 0.95 wide at the distinct humeri, 1.20 maximum, with the apices gently conjointly rounded and narrowly rounded at suture. Disc almost evenly rounded in transverse section; postbasal transverse impression feebly indicated. Surface with lightly papillate punctures ca. 0.04 mm from center to center, appearing feebly shiny. Setae moderately dense, subappressed, 0.08 mm long, tactile setae subdecumbent, slightly curved, 0.04 mm. Wings well-developed, probably functional.

Mesosternum shallowly punctured and pubescent medially, shiny and almost smooth laterally, the ventral portion of the mesepisterna similar to the sides. Mesepimera narrowly visible along edges of ventral portion of mesepisterna. Abdomen shiny, finely punctulate and with setae similar to elytra. Sternum 7 not modified, truncate at apex. Sternum 8 with a shallow transverse depression that is only very sparsely punctulate with a few fine setae, deepest near apex and extend-

ing most of the way across the segment, which has a subtruncate apex. Tergum 8 flattened, slightly concave longitudinally, 0.41 mm wide, with the apex gently rounded, without any indication of a median angulation. Surface shiny, finely punctulate and pubescent. Ventral sculptured portion flat, with no indication of a median keel.

Femora moderately stout, widest at apical third. Front femur with a deep, slightly margined, roughly circular pit, bearing a few erect setae from the middle of its flat and apparently membranous bottom (Fig. 6), on anterior portion of the side facing the tibia. Hind femur with an elongate pit, which has only the sides elevated (Fig. 7). Middle femur without a pit. Front femur 0.64×0.23 mm, front tibia 0.56×0.10 , hind femur 0.77×0.26 .

The ♀ has the pronotum less enlarged, with the sides only slightly narrowed behind. The ♀ from Colonia Benítez is 3.71 mm long. The pronotum is 0.92 mm long, 0.56 wide at base, 0.67 at 0.26 from base, 0.77 maximum and 0.31 at collar. The front margin is only slightly higher than the collar and slopes to it; and the disc is almost evenly rounded in section. It is only slightly broader than the head, which is 0.69 mm wide across the eyes. If the elytral length of the holotype were made equivalent, its pronotum would be 1.02 mm long and 0.89 mm in maximum width. The femora of the ♀ are slightly more slender and completely lack the pits of the ♂.

The holotype and most of the paratypes are all brown above, the ♀ from Colonia Benítez rufescent with the elytra brown, and the ♀♀ from Mojón de Fierro and Campo del Cielo all pale rufescent.

Holotype ♂: Colonia Benítez, Terr. Chaco, ARGENTINA, 12.XII. 1948, R. Golbach (Inst. Miguel Lillo). Paratypes: 1 ♀, same data (Inst. Miguel Lillo). 1 ♂, 1 ♀, Mojón de Fierro, Terr. Formosa, Argentina, 25.XII.1948, R. Golbach (Inst. Miguel Lillo). 1 ♀, Campo del Cielo, [Prov. Santiago del Estero, Argentina], I.1934, J. Bosq (Museo de La Plata). 1 ♂, 9 ♀, Cuyaba, Matto Grosso, Brasilien (Chicago Nat. Hist. Mus., from residual collection of Staudinger and Bang-Haas).

REFERENCES CITED

BLACKWELDER, R. E.

1945. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Part 3. U. S. Nat. Mus. Bull. 185 : i-iv, 343-550.

BONADONA, P.

1961. Révision des *Ischyropalpus* Laferté [Col. Anthicidae]. Rev. française Entomol. 28 : 150-177.

CASEY, T. L.

1895. Coleopterological notices VI. Anthicini. Ann. New York Acad. Sci. 8: 639-772.

VON KREKICH-STRASSOLD, H.

1914. Beiträge zur Kenntniss der Anthiciden. Verh. Zool.-Bot. Ges. Wien, 1914: 215-228.

DE LAFERTÉ-SÉNÉCTÈRE, F. T.

1848. Monographie des *Anthicus* et genres voisins, Coléoptères Hétéromères de la Tribu des Trachélides. De Sapia. Paris. *xxiv* + 340 p., 16 pls.

LENG, C. W.

1920. Catalogue of the Coleoptera of America, North of Mexico. John D. Sherman, Jr. Mount Vernon, N. Y. x + 470 p.

PIC, M.

1911. Coleopterorum Catalogus, pars 36, Anthicidae [vol. 17]. W. Junk. Berlin. 102 p.